

**United States Environmental Protection Agency's (EPA)**  
**Comments on Indiana's Regional NOx Reduction Rules**

The following are the EPA's (Clean Air Market Division's, Region 5's, and the Office of Air Quality Planning and Standard's) Draft comments for Indiana's Rule 10-4 Nitrogen Oxides Trading Program and Indiana's Rule 10-3 Nitrogen Oxides Reduction Program for Specific Source Categories. Thank you for letting us review these proposed rules. We hope our comments are helpful. We are continuing to work with you to resolve a few outstanding issues regarding Indiana's NOx SIP submittal. When these issues are resolved we will submit further comments if necessary.

We appreciate the care Indiana has taken to include the provisions of the model rule in the development of the proposed trading rule. We also anticipate the submittal of the budget demonstration and unit level allocations. Only with these elements can the EPA properly evaluate Indiana's rules for the sake of parallel processing and only with these elements can EPA take final action to approve these rules.

**Rule 10-4 Nitrogen Oxides Budget Trading Program**

**1. The 25-ton exemption**

States are allowed to develop alternative 25-ton exemptions to the one included in the model rule (part 96) provided they are based on permit restrictions that limit a unit's potential to emit during an ozone season to 25 tons or less. Indiana's proposed rule 10-4 Nitrogen Oxides Budget Trading Program section 10-4-1(b) includes the 25-ton exemption in the model rule and two additional exemptions. The 25-ton exemption based on the model rule restricts the unit's operating hours based on the highest sulfur fuel used at the unit. The reference in section 10-4-1(b)(3)(ii)(AA) must be changed to cite 40 CFR 75.19, table 2.

The first of the additional exemptions in Indiana's rule relies on CEMs data. In this exemption, units may use CEMS data to demonstrate that it is not emitting more than 25 tons during an ozone season. For this exemption to provide sufficient assurance that the unit will not emit more than 25 tons per season, the units must still be required to monitor and report emissions according to section 10-4-12 and part 75, subpart H even while the unit has the exemption. Indiana's rule must be revised to add this requirement.

The second of Indiana's additional exemptions attempts to restrict the unit's usage of each fuel that it is authorized to burn (natural gas or fuel oil) such that the unit's potential NOx mass emissions will not exceed 25 tons during the ozone season. This exemption is apparently intended to allow units which burn predominantly natural gas and only a small amount of oil to avoid using the default emissions rate in §75.19, Table 2 for oil when applying the 25-ton exemption. However, Indiana's provisions is unclear because of the confusing reference to "percentage of the ozone control period" in subsection (iii)(BB). Even if this is clarified to refer to percentage of operating hours in the control period, this still raises questions of how to treat hours when two fuels are burned subsequently or simultaneously. Further, the reference to "maximum amount of each fuel" in subsection (iii)(CC) must specify that it is the amount in mmBTUs. EPA suggests that a more workable approach to this exemption would be to include a

permit limit that restricts the units emissions to less than 25 tons, in addition to the fuel use restriction, and require that the tons of NOx emitted each ozone season be calculated as follows:

(iii) Limit the unit's calculated ozone season period emissions to twenty-five (25) tons of NOx emissions, determined as follows:

(AA) Identify the amount of each fuel type (in mmBtu) that the unit burned during the control period;

(BB) For each type of fuel identified in (AA), identify the default NOx emission rate in 40 CFR 75.19 Table 2;

(CC) For each fuel type identified in (AA) multiply the default NOx emission rate under subitem (BB) and the amount (in MMBtu) of the fuels burned by the unit during the control period;

(DD) Sum the products in (CC) to verify that the unit's NOx emissions were 25 tons or less.

Additionally, subdivision (5)(A) must be modified to read,

A unit under this subsection shall be a NOx budget unit, subject to the requirements of this rule if one (1) of the following occurs for any ozone control period:

(A) the fuel use restriction under subdivision (3)(A) or, for a unit under subdivision (3)(B)(i), the total NOx emissions as calculated under subdivision (3)(B)(i), or, for a unit under subdivision (3)(B)(iii), the units restriction on NOx emissions as calculated under (3)(B)(iii) or is removed from the unit's federally enforceable permit or otherwise is no longer applicable.

(B) the unit does not comply with the fuel use restriction under (3)(A), or, for a unit under subdivision (3)(B)(i), the total NOx emissions as calculated under subdivision (3)(B)(i), or, for a unit under subdivision (3)(B)(iii), the units restriction on NOx emissions as calculated under (3)(B)(iii).

When a unit receives a 25-ton exemption, the unit's emissions must be removed from the trading program budget to avoid double counting. Indiana's statement in section 10-4-9 that, "The total number of NOx allowances shall be adjusted, as needed to account for units exempted under section 1(b) [the 25-ton exemption]" is not adequate. The rule needs to include specific provisions for this adjustment. If Indiana does not plan on allocating to units with 25-ton exemptions, then it must subtract the unit's potential tons of emissions from the trading budget. Alternatively, if Indiana chooses to allocate to these exempt units, then immediately after EPA allocates allowances, EPA must be directed to deduct from the units' accounts the maximum number of tons of NOx emissions the units have the potential to emit. The AARs for the units must be required to ensure that enough allowances are in the units' accounts.

In part 97, EPA uses a hybrid of these approaches. For units which already receive an allocation and then become exempted, EPA deducts from a general account (specified by the AAR) the appropriate number of tons. Language for this can be found in §97.4(b)(4) (65 FR 2731):

**§97.4 Applicability...**

**(4) Special provisions.**

(i) A unit exempt under paragraph (b)(1) of this section [the 25-ton exemption] shall comply with the restriction on unit operating hours described in paragraph (b)(1) of this section during the control period in each year.

(ii) The Administrator will allocate NOx allowances to the unit under §§ 97.41(a) through (c) and §§ 97.42(a) through (c) [allocations to existing EGUs and non-EGUs]. For each control period for which the unit is allocated NOx allowances under §§ 97.41(a) through (c) and §§ 97.42(a) through (c),

(A) The owners and operators of the unit must specify a general account, in which the Administrator will record the NOx allowances, and

(B) *After the Administrator records a NOx allowance allocations under §§ 97.41(a) through (c) and §§ 97.42(a) through (c), the Administrator will deduct, from the general account under paragraph (b)(4)(ii)(A) of this section, NOx allowances that are allocated for the same or a prior control period as the NOx allowances allocated to the unit under §§ 97.41(a) through (c) and §§ 97.42(a) through (c) and that equal the NOx emission limitation (in tons of NOx) on which the unit's exemption under paragraph (b)(1) of this section is based.* The NOx authorized account representative shall ensure that such general account contains the NOx allowances necessary for completion of such deduction.

Under part 97, once the allocations are updated exempt units no longer receive allocations. Thus part 97 removes their potential emissions from the trading program budget in §97.40 (65 FR 2737):

**§ 97.40 Trading program budget.**

In accordance with §§ 97.41 and 97.42, [NOx allowance allocations] the Administrator will allocate to the NOx Budget units under § 97.4(a) [EGUs] in a State, for each control period specified in § 97.41, a total number of NOx allowances equal to the trading program budget for the State, as set forth in appendix C of this part, *less the sum of the NOx emission limitations (in tons) for each unit exempt under § 97.4(b) [25-ton exemption] that is not allocated any NOx allowances under § 97.42(b) or (c) for the control period and whose NOx emission limitation (in tons of NOx) is not included in the amount calculated under § 97.42(d)(5)(ii)(B) [deduction for new units that receive the 25-ton exemption.] for the control period.*

Similarly, under part 97, new units which receive the 25-ton exemption do not receive an allocation. Their tons of potential emissions are removed from the new source set-aside. The language for this deduction is in § 97.42(d)(5)(ii)(B), (iii) and (iv) (65 FR 2738)

(5) The Administrator will review each NOx allowance allocation request submitted in accordance with paragraph (d)(2) of this section [requests for allocations from the new unit set-aside] and will allocate NOx allowances pursuant to such request as follows: ...

(ii) The Administrator will determine the following amounts:

(B) For units exempt under § 97.4(b) [the 25-ton exemption] in the State that commenced operation, or are projected to commence operation, on or after May 1, 1997 (for control periods under § 97.41(a)); May 1, 2003, (for control periods under § 97.41(b)); and May 1 of the year 5 years before beginning of the group of 5 years that includes the control period (for control periods under § 97.41(c)), the sum of the NOx emission limitations (in tons of NOx) on which each unit's exemption under § 97.4(b) is based.

(iii) *If the number of NOx allowances in the allocation set-aside for the control period less the amount under paragraph (d)(5)(ii)(B) [potential emissions for new-units with the 25-ton exemption] of this paragraph is not less than the*

amount determined under paragraph (d)(5)(ii)(A)[requested NO<sub>x</sub> allocations from the new source-set aside] of this section, the Administrator will allocate the amount of the NO<sub>x</sub> allowances requested (as adjusted under paragraph (d)(5)(i) of this section) to the NO<sub>x</sub> Budget unit for which the allocation request was submitted.

(iv) In the number of NO<sub>x</sub> allowances in the allocation set-aside for the control period less the amount under paragraph (d)(5)(ii)(B) of the section is less than the amount determined under paragraph (d)(5)(ii)(A), the Administrator [will reduce the allocations proportionally.]

## **2. Permit Application Deadline**

In section 10-4-7 (b)(1)(A) and (B), it is not clear if the permit applications must be submitted 18 months prior to May 31, 2004, or if the rule is specifying that the applications must be submitted by May 31, 2004. The State apparently intends that the permits be submitted some period prior to May 31, 2004. The rule should be clarified to state the specific dates for permit submission.

## **3. Monitoring Requirements**

Indiana's section 10-4-12 (c)(1) does not require units to comply with the rule's monitoring and reporting requirements until May 31, 2004 unless they are applying for early reduction credits. However, the model rule requires compliance with the monitoring and reporting requirements one year before the emission reductions are required (i.e., May 31, 2003). The additional year of monitoring ensures that sources' monitoring and reporting systems are working and meeting part 75 requirements before the requirement to hold allowances begins in 2004. This reduces the possibility of monitoring and reporting errors that could result in a source holding insufficient allowances to covers its corrected monitored emissions data under part 75. Additionally, the monitored 2003 data will be available for determining allocations under section "10-4-9 NO<sub>x</sub> allowance allocations." Indiana must change its rule to require sources to comply with the monitoring and reporting requirements beginning May 1, 2003.

## **4. Indiana's New Source and Energy Efficiency and Renewable Energy Set-asides**

Indiana may include the new source, and energy efficiency and renewable energy set-asides outlined in section 10-4-9(e). However, the allowances reserved for these set-asides must come from the trading program budget. While EPA believes that this was Indiana's intent, Indiana must clarify that the allowances reserved for these set-asides come from its trading program budget.

## **5. Definition of Maximum design heat input**

Indiana's section 10-4-2 changes the definition of maximum design heat input to "the ability of a unit to combust a stated maximum amount of fuel per hour on a steady state bases, as determined by the physical characteristics of the unit *and the federally enforceable permit conditions limiting the heat input*. This expansion of the term is unacceptable as it would allow units (both new and existing) that meet the definition of a large electric generating unit or large non-electric generating unit under §51.121, which is based strictly on the physical characteristics of the unit, to be exempt from the trading program.

Additionally, such a definition could result in load shifting from affected to non-affected units. If there

were such load shifting, the emissions from the affected units would decrease so there would be unused allowances, but the emissions of the unaffected units that picked up the load would increase. The net result would be increased emissions due to the availability of the unused allowances. Finally, this definition would allow sources to move units in and out of the trading program simply through a permit change. This would significantly interfere with administration of the trading program, as well as undermining any budget demonstration.

## **6. Penalties**

The following language in §96.54(d)(3)(i) must be in the rule:

For purposes of determining the number of days of violation, if a NOx Budget unit has excess emissions for a control period, each day in the control period (153 days) constitutes a day in violation unless the owners and operators demonstrate that a lesser number of days should be considered.

The language stipulates the maximum number of days, in which a violation could be sought. However, EPA notes that if an agency were to seek penalties for a violation, it has the discretion to seek penalties for fewer days of violation. Removing this language would limit both the State's and EPA's ability to seek violation for the maximum number of days, which would be contrary to the Clean Air Act, as interpreted in case law.

## **7. Allocation Timing**

Section 10-4-9(b)(1) must be revised. The unit-by-unit allocations for 2004 must be included in the State SIP. (Note, that 51.121 requires the first three year's allocations to be submitted with the SIP. However, EPA has said in guidance that States need only submit the first year's allocations with the SIP.)

## **8. Differences Between Part 96 and 97**

In developing part 97, The Federal NOx Budget Trading Program, EPA made some changes that improved upon the model rule (part 96), making the program requirements more comprehensible and in many cases more flexible for sources. EPA encourages the States to make these changes in their SIPs. Further, EPA believes some of the changes must be made to allow for sources complying with the NOx SIP call and those complying with part 97 to be able to trade with one another. In addition, some of the changes made to the monitoring and reporting requirements were made to clarify source requirements, and in some were made to reflect recent revisions to part 75, which allow sources to take advantage of additional monitoring flexibilities.

Attached you will find a table which lists all of the changes.

## **Rule IAC 326 10-3 Nitrogen Oxides Reduction Program for Specific Source Categories**

### **326 IAC 10-3-1 Applicability**

(b) These rules can only supercede the NOx RACT rules for Louisville provided that the State either

provides photochemical dispersion modeling that shows the area remains in attainment without the RACT controls or the State can demonstrate that there are less NO<sub>x</sub> emissions from sources in Clark and Floyd Counties for the ozone season and that the risk of extreme daily and monthly emissions is minimal. For a demonstration, of the second type, to be valid, any kilns in the area could not opt into the trading program.

### **326 IAC 10-3-2 Definitions**

Indiana can consider adding the definition for clinker below:

Clinker means the product of a Portland cement kiln from which finished cement is manufactured by milling and grinding.

### **326 IAC 10-3-3 Emission Limits**

(a)(2) If a kiln is complying with the emission limits in 3(a)(2), an averaging time of at most 30 days needs to be developed consistent with the preamble to the proposed FIP, due to the variability associated with single stack tests discussed below.

(a)(3) We agree that a 30% reduction at a unit is a reasonable approach to achieving the emissions decreases intended by the proposed FIP rule. This approach is a variation of the industry-wide average emissions rate provision described in the proposal FIP notice. This approach uses actual, measured uncontrolled emissions to set the baseline rate and then requires a 30 percent reduction from that baseline.

While this approach provides flexibility to sources and may reduce costs, we are concerned that the site-specific emissions baseline needs to be carefully determined. Due to the large variability of emissions at cement kilns cited in comments we received on the FIP proposal and confirmed in the EC/R report, we believe that short-term emissions testing is not appropriate for this compliance option. An unduly high emissions reading with a short-term test could lead to a minimal emissions reduction requirement. Conversely, an unduly low emissions reading could lead to an unrealistically high emissions reduction requirement. Further, the EC/R report notes that approximately half of the operating cement kilns in the U.S. have already installed CEMS; thus, for many kilns a CEMS requirement would not be a new burden.

While short-term (1-3 hour) testing may not be appropriate for this option, a 30-day rolling average is an appropriate averaging period for determining compliance using CEMS. This is also consistent with the 30-day averaging period suggested in the proposed rule for the industry-wide average emission rate approach (note that the first 30-day average in the ozone season would include the May 1 to May 30 period, the second would include the May 2 to May 31 period, and the last would include the September 1 to September 30 period). Compliance is determined by calculating the arithmetic average of all hourly emission rates for 30 successive operating days, except for data obtained during startup, shutdown, malfunction, or emergency conditions. For setting the baseline emissions rate, a period longer than 30 days would also be acceptable, but should be limited to consecutive days during the ozone season. For these reasons, the State needs to requires CEMS to set the baseline on at least a 30-day average and determine compliance on a 30-day rolling average.

(c)(2) Since cement kiln operations tend to be highly variable, a single stack test is unlikely to be a

suitable mechanism for determining baseline emissions. If (a)(3) is being complied with, baseline emissions need to be established with CEMS, as discussed above.

### **326 IAC 10-3-4 Monitoring and testing requirements**

General - If a kiln is currently operating NO<sub>x</sub> CEMS, it should be required to continue to operate and maintain the CEMS. If the kiln is complying through (a)(2) or (a)(3), it also needs to comply using the CEMS data. If the kiln is complying under (a)(1), then it should use the CEMS data for its seasonal reporting under Section 5(b)(2) .

(a) The proposed 40 CFR 98.44 would require all sources subject to 40 CFR 98.43, that don't have CEMS to complete an initial performance test and subsequent annual testing consistent with the requirements of 40 CFR part 60, appendix A, Method 7, 7A, 7C, 7D, or 7E. While we recommend that all units that don't have CEMS be required to perform stack testing, so that a more accurate inventory can be developed, we can consider approval of rules that do not require the testing at units that are complying through meeting the technology requirements of 3(a)(1).

(b) If a kiln is complying with the emission limits in 3(a)(2), an averaging time of at most 30 days (rolling) needs to be developed consistent with the preamble to the proposed FIP. A testing program consistent with this approach also needs to be developed. The program could be based on CEMS or parameter monitoring. This is due to the variability in NO<sub>x</sub> emissions from cement kilns as referenced above.

If a kiln is currently operating and plans to comply with (a)(3), it needs to determine its baseline emissions with CEMS and should be required to install CEMS no later than May 1, 2002.

### **326 IAC 10-3-5 Record keeping and reporting**

(a)(1) The proposed changes to 40 CFR 98.44 would require all units to complete testing as described above. It is recommended that these sources also report the results of the performance testing and the daily cement kiln production records. This information will be used in the 2007/ 2008 timeframe to assess the effectiveness of the NO<sub>x</sub> SIP Call and the reductions that have been achieved. However, since these are technology requirements (ie low NO<sub>x</sub> burners or mid kiln firing), USEPA can consider approval of a rule that does not require performance testing and production records to be reported at units that are complying by installing the above technology.

(a)(2) Sources that are complying by meeting the emission limits on a pound of NO<sub>x</sub> per ton of clinker basis will need to keep daily cement kiln production records to ensure that the emission limits are complied with on at least a 30 day rolling averaging.

(b)(2) If the sources is currently operating CEMS or is complying with 3(a)(2) or 3(a)(3), it should determine its seasonal NO<sub>x</sub> emissions based on the CEMS data. If the unit is complying with 3(a)(1) and is not currently operating CEMS it can establish an emission rate to be used to estimate ozone season NO<sub>x</sub> emissions for reporting purposes based on any one of the following:

- 1) The average emission factors for the type of kiln from the Compilation of Air Pollutant Emissions Factors(AP-42)\* and the Alternative Control Techniques Document No<sub>x</sub> Emissions for Cement Manufacturing\*.
- 2) Site specific emission factors developed from representative emissions testing, pursuant to 40CFR 60, Appendix A, Methods 7, 7A, 7C, 7D, or 7E\*, based on a range of typical operating conditions.
- 3) An alternate method for establishing the emission factors, when submitted with supporting data to substantiate such emissions factors, when submitted with supporting data to substantiate such emission factors and approved by the department and the U.S.EPA.